Note

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RIVERS, DELTAS & COASTS

To	:	Celtique Energie
From	:	Louisa Wade
Date	:	23 April 2013 (updated August 2013 to reflect site boundary change)
Checked by	:	Helena Wicks
Approved by		Nicholas Taylor
Our reference	:	9Y0893/N130423/304230/Hayw
Subject	**:**	**Wisborough Green-1: Flood Risk and Surface Water Drainage Assessment**

Contents

1. Introduction

This Flood Risk Assessment report has been prepared by Royal HaskoningDHV (RHDHV), on behalf of Celtique Energie (the Client) to provide flood risk advice in relation to the siting and construction of a temporary well site.

The scope of the works included the assessment of flood risk to and consideration of the surface water drainage proposals for the site. The scope follows the same approach as previously agreed with the Environment Agency for the temporary well site located at Broadford Bridge, as part of a separate planning application. This approach was developed through correspondence and discussions with the Environment Agency and has informed the details contained within this report. The Broadford Bridge site gained planning approval in February 2013 and the measures proposed there met with the approval of the Environment Agency. Mitigation for the Wisborough Green-1 site will be similar to the other sites, as confirmed with the Civil Engineer Richard Elliott by email on 12th February 2013, and we do not envisage that there will be additional concerns. A telephone conversation between Louisa Wade (RHDHV) and Keely Mowatt (Environment Agency) (pers. comm. LW/KM, 14/02/13) and subsequent email correspondence, dated 18th March 2013, confirmed that there are no concerns in principle to the approach as indicated by the following, taken from the email correspondence:

"I can confirm that we have no objection to the approach you have taken in relation to flood risk, and we therefore have no further comments at this time".

The government policy on planning and development is set out within the National Planning Policy Framework (NPPF), published in March 2012. The guidance on flood risk within the NPPF retains key elements of Planning Policy Statement 25: Development and Flood Risk

(PPS25), which was revised in March 2010. Its aims are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding and wherever possible to direct development away from areas at highest risk.

It is anticipated that the assessment will be submitted to the local planning authority to support a planning application and therefore the advice contained in this report is in accordance with the guidance set out in the NPPF and accompanying Technical Guidance document.

2. Background

The Assessment Site (known as Wisborough Green-1) is located within the boundary of Chichester District Council (CDC) and West Sussex County Council (WSCC). Additionally, the site is located outside of the South Downs National Park and north of the SSSI and SAC designated area of Idehurst Copse.

The proposed development (Wisborough Green-1) is for the temporary development of an exploratory well site on land south of Boxal Bridge, Kirdford Road, Billingshurst, West Sussex RH14 0DD (NGR: 503583, 126740). The site is 1.63ha comprising an access road, staff car park (with up to 12 spaces) and a drill site. The red line boundary for the development is provided as **Appendix A**.

The proposed development comprises the construction of a temporary well site including access track and ancillary infrastructure, for the exploration, testing and evaluation of hydrocarbons. In addition, remediation works are planned for Boxal Bridge to make HGV access acceptable and the main vehicular route is likely to be from the A272 and through Wisborough Green. The proposed development includes the following, provided as a preliminary indication of the onsite infrastructure required:

- Site clearance involving the excavation and removal of top soil;
- Temporary screening bunds on the northern and eastern boundaries of the well site compound to store excavated topsoil and subsoil;
- Construction of the access track using crushed stone;
- Delivery of a drilling rig and ancillary drilling equipment for construction of an exploratory well;
- Staff car park to provide up to 12 spaces within the compound but outside of the drilling area;
- Concrete chamber sunk into the ground acting as a Cellar to include large diameter pipework as a starting point for drilling;
- Purpose built tanks for the storage of semi-dry drilling mud and rock cuttings;
- External lighting to drill rig including rig floor, mud tanks and pumps, catwalk, doghouse and site cabins;
- On site water storage tankers and a portable skip for on-site refuse collection;
- Erection of 7 portable cabins providing temporary office accommodation and essential 24-hour staff living accommodation and laboratories; and
- Noise attenuation and dust control procedures that will operate on site including effective silencers and damping down runways as the weather dictates.

It is important to note that the application is for temporary drilling works that are expected to last for a maximum (worst case scenario) of 74 weeks if both a vertical and lateral well are explored. If a lateral well is not required, then the duration will reduce to 34 weeks. In the best case scenario the temporary drilling works will last for a maximum of 20 weeks or 29 weeks if a lateral well is explored. As the site is proposed to be returned to its current status it is anticipated that there will be no long-term impact as a result of the proposed development.

3. Flood Risk

A review of the Environment Agency Flood Zone map (see Figure 1) has identified that the site is located within Flood Zone 1, which is classified as 'Low Probability' and defined as:

"This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding in any year (<0.1%)".

The NPPF Technical Guidance identifies various types of development and assigns a flood risk vulnerability classification; however the specific vulnerability classification is not considered to be significant with regard to the proposed development as the guidance also identifies that all land uses are appropriate in this zone. The proposed development site lies approximately 100m south of the Boxal Brook and outside the resulting 1 in 100 year (1% annual exceedance probability) flood extent. In addition, it should be noted that the site is at an approximate elevation of 20m AOD, while the brook is located at approximately 10m AOD. As such, it is considered highly unlikely that floodwaters from the brook would reach the site during the temporary development lifetime as a result of any potential allowance for climate change.

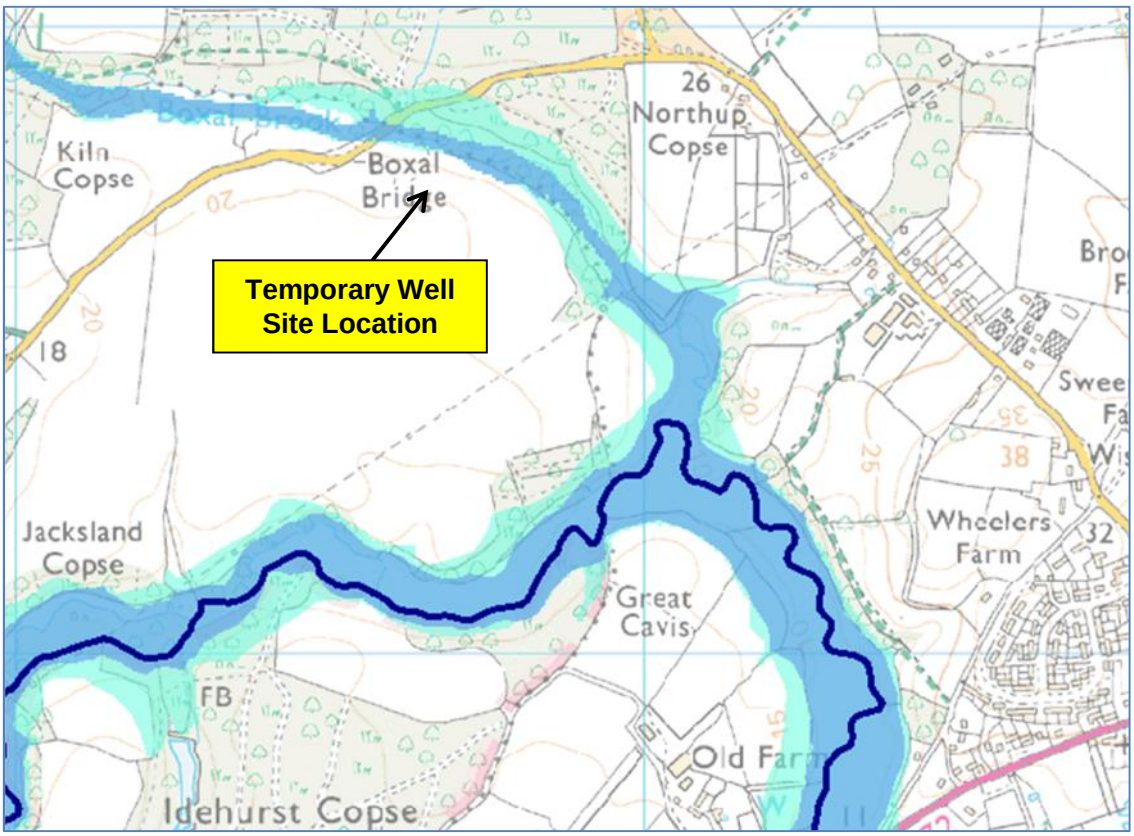


Figure 1: Extract of the Flood Zone map from the Environment Agency website (downloaded 05/03/2013)

Previous correspondence between Helena Wicks (RHDHV) and Grant Moffatt (Development and Flood Risk Officer, Environment Agency) dated 7th February 2012, for the Broadford Bridge temporary well site confirmed that:

"…any Flood Risk Assessment would need to concentrate on surface water issues in this instance".

A telephone conversation with the Environment Agency (pers. comm. LW/KM, 14/02/13) identified that a similar approach was likely to be appropriate. Therefore, based on the guidance from the Environment Agency and the limited risk of flooding to the site this Flood Risk Assessment report focuses on surface water drainage on and from the site.

4. Surface Water Drainage

In addition to the telephone discussion between Royal HaskoningDHV and the Environment Agency (described above), an email was issued to Keely Mowatt, Development and Flood Risk Officer, Environment Agency dated 11th February 2013. The correspondence provided details of the proposed developments and outlined the adopted approach, that is, to focus on the management of surface water and demonstrate that the proposal would not increase flood risk at the site. The email referred to the previous correspondence from 2012, which detailed the proposed surface water strategy for the original sites. This included:

- *The access road will consist of a tarmac entrance with drainage where required.*
- *The internal well site surface will be formed with crushed stone compacted on top of a geotextile layer and to a normal fall to a perimeter interceptor ditch.*
- *Interceptor ditches will be lined with a Bentomat geomembrane falling to a corner sump area.*
- *The contents of the surface water collection ditch and compound sump would be emptied as necessary and transported by road tanker for disposal at an approved location.*

In addition to the above, information was obtained from the engineer designing the drainage as follows:

- *The surface water drainage ditches are lined using Bentomat to seal the ditches which provides a flexible but highly effective seal.*
- *The ditches and "sump" area are designed to retain storm water during the 1 in 10 year event due to the limited lifespan of the development. The water will be tankered away from site, as necessary, on the basis that there might be a contaminant that has not been identified rather than allowing this to discharge directly into the ground.*
- *In addition, the storage provision allows for there being a "blow-out" on the site and this storage exceeds the 1 in 100 year storm. If there was a 1 in 100 year storm the storage is such that the site would be approximately 25mm under water.*

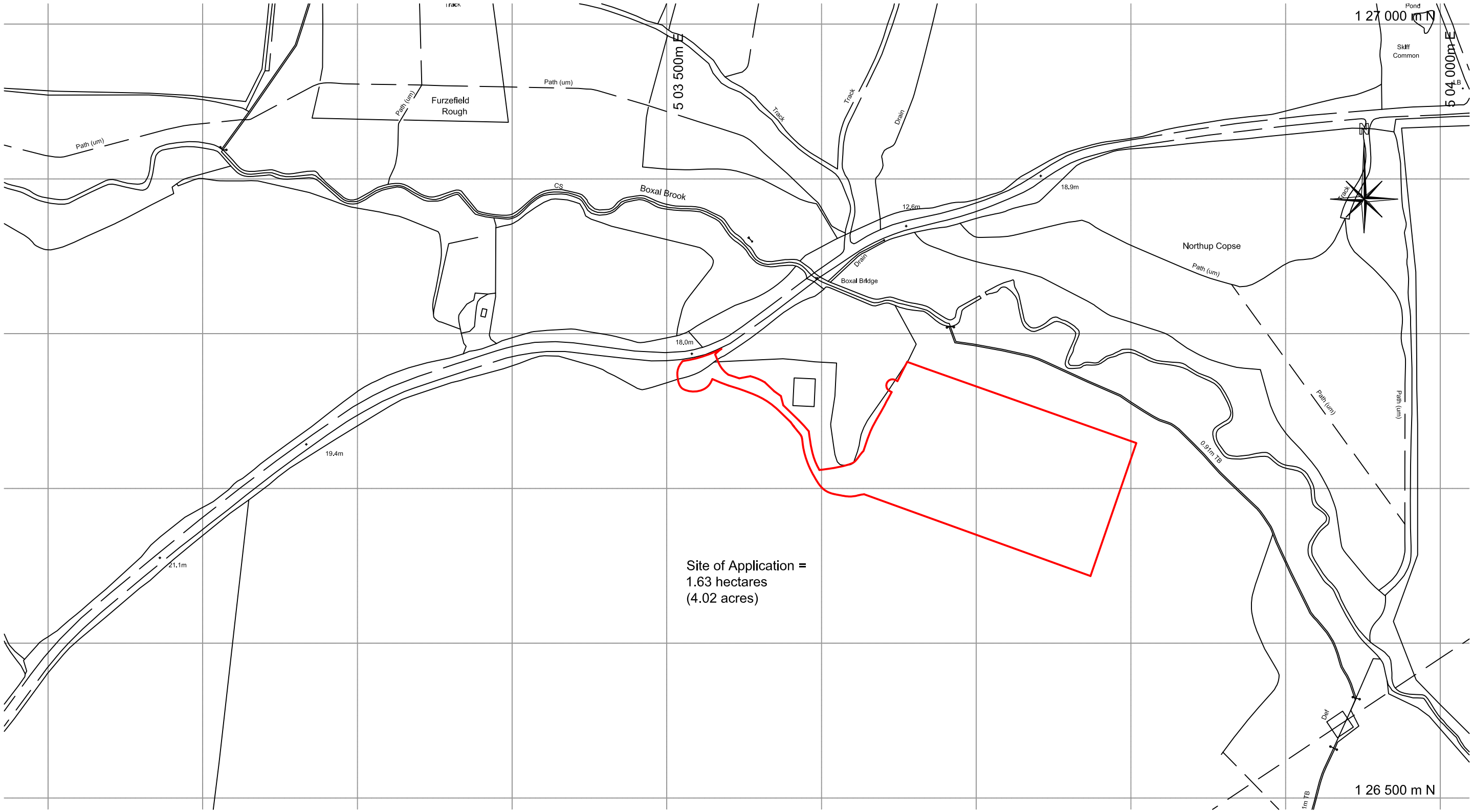
The above email was sent to Keely Mowatt and followed up with a telephone conversation, as previously noted, in February 2013, which indicated that the Environment Agency did not have any concerns.

Details of the written correspondence between Royal HaskoningDHV and the Environment Agency can be provided upon request.

Following correspondence with the Environment Agency and a review of the proposed development, it is considered that based on the temporary nature of the development and its location within Flood Zone 1 it is appropriate in terms of flood risk. Additionally, measures will be implemented to ensure that there is no impact on or from the development as a result of increased surface water runoff.

Appendix A

Red line boundary



Site of Application

Scale 1:2,500

0 25m 50m

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Client: Celtique Energie Petroleum Boxal Bridge Wisborough Green West Sussex	Drawn By: AJNE	Date: April 2013	Sheet Size: A3
Job Title: Wisborough Green-1	Drawing Title: Site of Application (1:2,500)		
	Drawing Number: 3582 P 02		Revision: C